

CLAIMS

What is claimed is:

1. An optical pickup actuator for an objective lens, comprising:
 - a base;
 - a wire holder installed to the base;
 - a bobbin holding the objective lens;
 - a first yoke positioned between a first side of the bobbin and the wire holder;
 - a second yoke positioned opposing a second side of the bobbin;
 - a damping member insertable into an opening in the first yoke;
 - a plurality of suspension wires each having one end fixed to the wire holder and an other end movably supporting the bobbin; and
 - a magnetic driving unit driving the bobbin in focusing and tracking directions.
2. The optical pickup actuator according to claim 1, the first and second yokes each comprising:
 - a central wall, and
 - two side walls,
 - wherein through-holes are formed in the two side walls of the first yoke in a longitudinal direction of the side walls, the damping member insertable into the through-holes, and each of the plurality of suspension wires is passable through the damping member.
3. The optical pickup actuator of claim 2, wherein the magnetic driving unit includes:
 - focusing coils wound along a side wall of the bobbin,
 - tracking coils wound on edges of the bobbin, and
 - magnets attached to the first and second yokes.
4. The optical pickup actuator according to claim 3, wherein the tracking coils are wound perpendicularly to a winding direction of the focusing coils, one portion of each of the tracking coils is wound on a surface opposite to the magnets, and the other portion is wound on a surface which is not opposite to the magnets.

5. The optical pickup actuator according to claim 1, wherein the magnetic driving unit includes:

multipolar magnets attached to the first and the second yokes, and
fine pattern focusing coils and fine pattern tracking coils installed in the bobbin opposing the multipolar magnets.

6. The optical pickup actuator according to claim 1, wherein the magnetic driving unit includes:

focusing coils wound along a side wall of the bobbin;
tracking coils wound on edges of the bobbin; and
magnets attached to the first and second yokes.

7. The optical pickup actuator according to claim 6, wherein the tracking coils are wound perpendicularly to a winding direction of the focusing coils, one portion of the tracking coils is wound on a surface opposite to the magnets, and the other portion is wound on a surface which is not opposite to the magnets.

8. The optical pickup actuator according to claim 1, wherein the inserted damping member is positioned close to an optical axis of the objective lens.

9. An optical pickup actuator for an objective lens, comprising:
a base;
a bobbin holding the objective lens;
first and second yokes disposed symmetrically with respect to the bobbin installed on both sides of the bobbin, and each having a central wall and two side walls;
a damping member insertable into grooves in each of the two side walls of the first and second yokes;
first and second wire holders installed outside the first and second yokes;
a plurality of suspension wires, each having one end fixed to the first wire holder and an other end supported movably by the second wire holder, the suspension wires passing through the damping member and movably supporting the bobbin; and
a magnetic driving unit driving the bobbin in focusing and tracking directions.

10. The optical pickup actuator according to claim 9, wherein the magnetic driving unit includes:

- focusing coils wound along a side wall of the bobbin;
- tracking coils wound on edges of the bobbin; and
- magnets attached to the first and second yokes.

11. The optical pickup actuator according to claim 10, wherein the magnets are insertable into central grooves formed on each of both side walls of the first and second yokes.

12. The optical pickup actuator according to claim 11, wherein a through-hole is formed in the second wire holder, and an end of each of the suspension wires is movably inserted into the through-hole.

13. The optical pickup actuator according to claim 9, wherein the magnetic driving unit includes:

- multipolar magnets attached to the first and second yokes; and
- fine pattern focusing coils and fine pattern tracking coils disposed in the bobbin to oppose the multipolar magnets.

14. The optical pickup actuator according to claim 9, wherein a through-hole is formed in the second wire holder, and an end of each of the suspension wires is movably inserted into the through-hole.

15. The optical pickup actuator according to claim 9, wherein the inserted damping member is positioned close to an optical axis of the objective lens.

16. An optical recording and/or reproducing apparatus, comprising:
a spindle motor rotating a disc;
an optical pickup inserted movably in a radial direction of the disc and records, and/or reproduces, information on, and/or from, the disc;
a driving unit driving the spindle motor and the optical pickup; and
a controller controlling a focusing servo and a tracking servo of the optical pickup,
wherein the optical pickup includes:
a base,
a wire holder formed on one side of the base,
a bobbin on which an objective lens is placed,
a first yoke provided between one side of the bobbin and the wire holder, and a second yoke provided on the other side of the bobbin, a damping member being inserted into the first yoke,
a suspension wire in which one end is fixed to the wire holder and the other end movably supports the bobbin, and
a magnetic driving unit driving the bobbin in focusing and tracking directions.

17. The optical recording and/or reproducing apparatus according to claim 16, the first and second yokes each comprising:
a central wall, and
two side walls,
wherein through-holes are formed in the two side walls of the first yoke in a longitudinal direction of the side walls, the damping member insertable into the through-holes, and the suspension wire passable through the damping member.

18. The optical recording and/or reproducing apparatus according to claim 17, wherein the magnetic driving unit includes:
focusing coils wound along a side wall of on the bobbin;
tracking coils wound on edges of the bobbin; and
magnets attached to the first and second yokes.

19. The optical recording and/or reproducing apparatus according to claim 18, wherein the tracking coils are wound perpendicularly to a winding direction of the focusing coils, one portion of the tracking coils is wound on a surface opposite to the magnets, and the other portion is wound on a surface which is not opposite to the magnets.

20. The optical recording and/or reproducing apparatus according to claim 16, wherein the magnetic driving unit includes:
multipolar magnets attachable to the first and second yokes; and
fine pattern focusing coils and fine pattern tracking coils installed in the bobbin opposing the multipolar magnets.

21. The optical recording and/or reproducing apparatus according to claim 16, wherein the magnetic driving unit includes:
focusing coils wound along a side wall of on the bobbin;
tracking coils wound on edges of the bobbin; and
magnets attached to the first and second yokes.

22. The optical recording and/or reproducing apparatus of claim 21, wherein the tracking coils are wound perpendicularly to a winding direction of the focusing coils, one portion of the tracking coils is wound on a surface opposite to the magnets, and the other portion is wound on a surface which is not opposite to the magnets.

23. An optical pickup actuator for an objective lens, comprising:
a base;
a wire holder installed to the base;
a bobbin holding the objective lens;
a plurality of yokes with at least one of the yokes positioned between the bobbin and the wire holder;
a damping member insertable into an opening in at least one of the yokes;
suspension wires each having one end fixed to the wire holder and an other end movably supporting the bobbin; and
a magnetic driving unit driving the bobbin in focusing and tracking directions.

24. An optical pickup actuator for an objective lens, comprising:
- a base;
 - a plurality of wire holders installed on the base;
 - a bobbin holding the objective lens;
 - a plurality of suspension wires, each of the wires having one end fixed to one of wire holders and an other end supported movably by another wire holder, and movably supporting the bobbin;
 - a plurality of substantially U-shaped yokes disposed symmetrically with respect to the bobbin;
 - a damping member insertable into a grooves in each a wall of the yokes, the suspension wire passing through the damping member; and
 - a magnetic driving unit driving the bobbin in focusing and tracking directions.
25. An optical pickup actuator for an objective lens, comprising:
- a base;
 - a wire holder installed to the base;
 - a bobbin holding the objective lens;
 - a plurality of yokes with at least one of the yokes positioned between the bobbin and the wire holder;
 - a damping member insertable into an opening in at least one of the yokes;
 - a suspension wire having one end fixed to the wire holder and an other end movably supporting the bobbin;
 - a magnetic driving unit driving the bobbin in focusing and tracking directions;
 - focusing coils wound on the bobbin; and
 - tracking coils wound on edges of the bobbin perpendicularly to a winding direction of the focusing coils, at least one portion of the tracking coils is wound on a surface opposite to a magnet.